seeking jobs need to be more active. In Australia, there are relatively affluent job opportunities, and companies are looking for qualified job candidates. This puts the job seekers and the institutions providing VET to those job seekers in a more advantageous position.

In a word, we conclude that the differences in VET systems and labor market conditions between the two countries have played important roles in determining the types of linkage between the VET institutions and industry.(jhchoi@krivet.re.kr)

Manpower Policy Directions and Issues Based on the Industrialization of Knowledge in Korea

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I. Overview

With the emergence of new technologies, it has become necessary for the supply and demand system of manpower and human resources development, which is designed for constricted economic growth solidarity, symbolic of the 20th century industrial society, to be reorganized to match the knowledge-based economy of the digital period.

The purpose of this study was to examine the procedures in which the knowledge-based industry has contributed to the present economy, through

analysis of our domestic economic structure; to analyze the subsequent degree of execution of the knowledge-based economy; and, on these findings, to suggest directives for human resources development in the knowledge-based economy of the future.

For this purpose, the amount of R&D investment contributed toward economic growth, which is the source of national core technology development, was positively measured using the Jones pattern, which is transformed from an endogenous growth pattern induced from a production function. The level of human resources development contributed toward economic growth was also presumed and suggested. In addition, findings based on the analysis of the human resources forming processes of OECD developed countries and the tasks for human resources development policy to renovate and connect technique innovation systems and manpower development systems are presented.

Ⅱ. Performance progress toward a knowledge-based economy

An examination of recent progress in domestic growth shows that, since the benefits of knowledge-based industry have increased, our national economy should aim at industrial policies centered on knowledge-based industries. Further, in the labor market, the employment rate in knowledge-based industries has increased remarkably. In fact, employment in the knowledge-based manufacturing industry has significantly increased despite an overall decrease in the manufacturing industries as a whole. Accordingly, it is evident that the harmonious supply and demand for manpower in the knowledge-based industries and the necessary development of manpower are the core for raising national competitive power.

Ⅲ. Current research and human resources development

Modifications in the international economic system, such as the reorganization of the WTO system, have been conducted, and changes in the business environment have been considerable; that is, integration of the international economy, intensification of regional labor divisions, and changes in the roles of small and medium sized companies in terms of skills and innovation.

It is necessary to increase the level of R&D investment to acquire the competitive power of scientific technique; research development investment of the governmental and public sectors needs to be enlarged in order to aid research development investment from the private sector; and continual investment in university and foundational research in order to acquire fundamental and original techniques, and for this purpose, to construct fundamental research institutes and infrastructures.

While the fundamental environment for our national research development is poor, the rate of research development investment per GDP is at the same level as that of other developed countries and, compared to international trends in R&D investment, it can be affirmed that the effective control of R&D investment is rather important.

The distinct changes in the human resources system are; (a) enlargement of investment for human resources development; (b) improvement of proper consumer-led programs; (c) planning and execution of low-cost and highly effective educational and training programs; (d) periodical evaluation of accomplishments; and (e) establishment of a lifelong learning system, etc. The directives for human resources development policy are; (a) effectuation of an information-oriented technique-based education to prepare for the information-

oriented society; (b) education centered on the abilities that are required by a knowledge and information-oriented society; and (c) renovation of the academe to prepare for the emerging knowledge-based society.

Ⅳ. Status of and prospects for research development and human resources

Due to the swift decline in business resulting from the IMF economic crisis, cooperative business circumstances have become extremely worse and, thus, production is highly restricted. The prime purpose of corporate operations has shifted to durability, causing corporate investment in research development to contract. The government has also been affected by these circumstances, and R&D investment has diminished greatly while its recovery delayed.

It is predicted, however, that R&D investment will increase along with the enlargement of government financial support for research development of the fundamental sciences.

An examination of the base of human resources has found that digital technology and the information base is unsatisfactory, excellent human resources have not improved qualitatively, and changes in the industrial scene are not reflected in the cultivation of human resources because of skills disagreement in the supply and demand of manpower. Meanwhile, in the human resources market, demand for highly educated experts and highly skilled workers has increased; the organization of enterprises and abilities to perform tasks have changed; the status of employment has diversified, and so on. In the education and training market, the paradigms of education and training have changed; supply and demand for education has diversified; and digital links between industry and community have become differentiated.

Ⅴ. Positive analysis on the degree of contribution to research development and education and training toward economic growth

In order to compare and analyze the degree of contribution for each production element, such as labor, capital, etc., in our domestic long-term economic growth, specifically to examine the effects of investment in human resources development, investment in research development, etc., which are important in the transition to a knowledge-based economy, has brought out in economic growth, the Jones model was used for a positively analysis.

As a result, it was found that production per person during the period 1970-1996 grew by 5.3%, the effect of labor distribution was negligible and its contribution degree was negative. It is presumed that the effect of educational accomplishment was 14.6%, and that of research intensification was 38.7%.

The prime presumptive aim of this positive analysis was the effect of human resources, which is composed of the effect of educational accomplishment and that of research intensification, presumed to be 53.3% and this is three times the effect of capital intensification. Through these findings, it can be positively determined that the power for our domestic economic growth can be the effect of human resources rather than that of capital intensification.

Ⅵ. Directives and task of human resources development(HRD) policy

1. Fundamental directives for HRD innovation

In the directives for manpower supply and demand, which contributes to the

progress of a knowledge and information-oriented society, acquisition and supply of core manpower is essential, which metamorphoses new techniques satisfying the process to digital economy.

In the international skills market, as international markets are integrated, the cost of research development is increasing because technique innovation is important for the acquisition of competitive superiority; the efficiency of R&D is emphasized as an increasing technical and commercial uncertainty; and the periods for research development are being shortened. In addition, in the human resources development market, from a macroscopic view, at the change of technique circumstances, preparation of diverse system, policy and vision and promotion policy to connect the labor market and the education market at national scale is receiving a large degree of attention. From a microscopic view, modification of corporate organization and rules, grants of incentives to organization men, and changes of paradigms toward the department of education and training.

The core directives of HRD change through technique innovation is to allocate strategic areas which can bring out competitive superiority in the international market; to develop supporting system to support it intensively; to value highly the development of nation innovation system in the long-term view rather than short-term accomplishment. For this purpose, policy plan and evaluation needs to be settled, which approaches systematically to the whole innovation process, and related technical manpower group should be cultivated.

The essence of HRD renovation directives should be creation and distribution of new knowledge and information through education and training policy; cultivation of manpower that can absorbs and utilizes the proper knowledge and information at proper time. Thus, domestic manpower policy should be promoted to raise the ability for creation, absorption, and utilization of knowledge and information of each citizen.

2. HRD tasks through technique innovation policy

Industrial policy tasks for technical innovation are aggressive enticement of the multi-international corporations and propulsion of industrial integration of the small and medium sized companies of middle standing.

R&D policy tasks for technical innovation can be support for the private sectors through enlargement of R&D investment of government and public sectors; new appreciation about the importance of R&D; R&D investment and support in the competitive fields; construction of organic R&D connecting systems; reinforcement of incentives regarding research manpower; formation of cognition, efforts and knowledge of the highest managers with respect to R&D; inducement of college as central base for R&D enlargement.

3. Policy tasks for HRD innovation

National tasks for human resources development are first, as those of the labor market, dealing with increment of demand for the core technical manpower. For construction of information infra in the labor market, management of statistical information to provide technical information in detail, and conventionalization of information process in the labor market and raise of the education market utilization are needed. In addition, quality raise of manpower demand in the manufacturing sectors is needed.

Second, as tasks for manpower demand and supply, estimation of investment earning rate for manpower demand and supply, estimation of human resources for manpower demand and supply, and inducement of signal systems of the labor market for the view of demand and supply are needed.

Third, as tasks for human resources development, the proper directive is development of human resources having skills and knowledge that can cope

with the corporation's requisition with favorable jobs in knowledge-based industrialization. For this purpose, the process should be divided as; (a) development of core human resources, (b) development of periphery human resources, and (c) development of minority human resources such as woman, handicapped men, etc. In addition, improvement of supply organization for intellectual manpower; improvement of manpower quality based on excellent scholarship; creative development of human resources; substantiation of vocational education and training, construction of various lifelong education that is; (a) inducement for employee's participation into lifelong learning and support enlargement, (b) uplift of quality and job sites through lifelong education, (c) enlargement of opportunity for lifelong vocational education and training, and (d) substantiation of lifelong vocational education and training.

The enterprise's tasks for human resources development are inducement proliferation of knowledge business to strengthen enterprise's competitive power, support intensification for small and medium sized companies and ventures and support for inauguration of enterprises, systematization of human resources development of enterprises and inducement of management, cultivation of human resources developing industry, labor union's participation to HRD. (cwjang@krivet.re.kr)